Miller, Walker, and Salmon Basin Plan
Project Management Team Meeting

Date: Thursday April 8, 2004

Time: 9:00AM – 12:00PM

Location: City of Burien City Manager's Conference Room

Meeting Summary

Attendees

Dan Bath	City of Burien
Bruce Bennett	King County
Bob Duffner	Port of Seattle
Curt Crawford	King County
Roger Kuykendall	Gray & Osborne (for the City of Normandy Park)
Steve Osmek	Port of Seattle (Biologist, Airport Operations)
	osmek.s@portseattle.org
Julie Cairn	King County

General items will be addressed later in the meeting.

FAA Contact and Issues

At the request of the PMT, Bruce Bennett contacted Lynn Deardorff of the FAA. The PMT wanted to have a presentation about the requirements that would potentially impact the potential expansion of the Miller Creek Regional Detention Facility (MCRDF). Ms. Deardorff discussed the FAA concerns with Bruce, and allowed that their goal was to have a net reduction in open water surrounding SeaTac Airport, period. She told Bruce that this goal has nothing to do with the third runway project, and that the FAA would be pursuing it very actively with the Port.

Ms. Deardorff was reluctant to come to the PMT meeting, or to send any of her staff. She suggested that the PMT talk to Steve Osmek from the Port of Seattle, because he is familiar with the FAA concerns, and is having to address them in other Port projects such as the Des Moines Creek Basin Plan implementation projects.

Bruce agreed to contact Steve Osmek, but let Ms. Deardorff know that she may be requested to attend a PMT meeting in the future if there were policy related issues or questions that the PMT needs her input on.

Given the overall goal of reducing open water that Ms. Deardorff stated, we should look at covers and vaults for storage in the vicinity of the MCRDF. Doug Chin is doing some costing of these two options. The overall storage needed in the basin, based on the modeling, is 65 acre-feet. Based on conceptual calculations, it was determined that

Action items are highlighted

expansion of the MCRDF could potentially address 40 acre-feet of this need (by increasing the berm elevation). There might be dam safety issues with this approach, however, so this would need to be looked at.

Vault costs have been discussed previously as $5 - $10/CF. The $10/CF is roughly equivalent to $400,000 per acre-foot. The PMT agreed that $500,000 per acre-foot is probably a good planning level estimate.

Floating covers cost roughly $4.0/SF (capital costs and installation only). Operations and maintenance costs of wildlife control devices (floating covers or netting or bird wires) can be very significant.

Presentation on FAA Requirements

Bruce contacted Steve Osmek from the Port of Seattle. Steve Osmek attended the PMT meeting, and gave a presentation about the FAA issues that the Port is having to address on other similar projects. Steve is a Biologist in Airport Operations at the Port of Seattle.

A PDF version of the PowerPoint presentation is attached to this document (not embedded because of file size). A few slides with multiple images did not convert as well, but most of the presentation converted just fine.

Steve also referenced or shared several other related documents. There are links to two of them, and the third is also attached to this document.

Memorandum of Agreement between the Federal Aviation Administration, the U.S. Air Force, the U.S. Army, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture to Address Aircraft-Wildlife Strikes (http://wildlife-mitigation.tc.faa.gov/public_html/moa.pdf)

FAA/USDA document - Wildlife Hazard Management At Airports - A manual for airport personnel (http://wildlife.pr.erau.edu/EnglishManual/EngStart.pdf)

Steve also explained that there is a new version of the Advisory Circular 150/5200-33 which clarifies/strengthens the FAA's original intent of what's expected of airport operators referencing wildlife attractants/hazards. This DRAFT is currently being referred to as Advisory Circular 150/5200-**33A**. This is an attached document.

The Port is required to have a Wildlife Hazard Management Plan. This is one of the certification documents required by the FAA.

Often times, the need to reduce wildlife attractants around the airport is in direct conflict with the best management practices for stormwater quality and quantity control. Wetland mitigation methods can also be in conflict.

For any project located within 5 miles of the airport, the Port of Seattle must review the project, and must go on record opposing a project that could increase wildlife attractants

Action items are highlighted

or wildlife use (per the FAA Advisory Circular). The Port should be involved in working to find alternatives that are less attractive to wildlife and birds.

The most significant zone of concern around the Airport is 10,000 feet on the ground (which is just less than 2 miles) and 1000 feet above ground level. Most (~80%) of bird strikes occur in this area.

After reviewing the slideshow, and discussing the FAA issues as they were applied to the Des Moines Creek project, it was concluded that while not impossible, expansion of MCRDF as initially envisioned has some very significant issues/requirements that would have to be addressed. If these issues/requirements could be addressed, the Port of Seattle is not opposed to this potential project.

For the Des Moines Creek project, FAA/USDA reviewed and approved the plan. This was tied to federal funding provided to the airport as part of the cost share. The FAA also had to approve the ILA for the construction before the Port could sign it. The FAA has to approve any projects to be constructed on Port property. This requirement would apply to anything at MCRDF.

The PMT is interested in increasing the understanding of the associated issues, and the certainty about the feasibility for a potential project at MCRDF before releasing a public review draft of the basin plan containing it as a recommended project. Steve Osmek suggested we work with Lawrence Schaefer of USDA Wildlife Services. The FAA has a Memorandum of Agreement with USDA Wildlife Services. Generally, the FAA will concur with the decisions made by the USDA staff. Steve will send Bruce Bennett contact information for Lawrence Schaefer. Bruce will provide some conceptual drafts of the MCRDF project to Lawrence for review.

The PMT asked what the Port's annual budget is for implementing the Wildlife Management Plan. Steve stated it is about $250,000 per year – this does not include capital costs.

The PMT summarized the potential projects that had been identified thus far in the basin plan. Steve's initial reaction was that the Port would likely oppose the removal of the 1st Avenue South fish passage barrier without 1) a clear understanding of the potential increase in wildlife attractants that would occur with fish presence upstream of 1st Avenue, 2) a plan to address the increased hazards and 3) more time to assess wildlife populations trends in the area. However, these concerns could be considered if such a project was conducted in a phased approach with the barrier removal occurring after the establishment wildlife hazard mitigation options such as increasing the density of plant cover over the stream. This extra time would also allow for a more thorough analysis of data currently being collected on long-term trends in wildlife abundance near the airport.

Steve was asked for a reaction to projects that increased fish use in the streams downstream of 1st Avenue South. His initial reaction was that he did not think this would be as concerning.

Bruce noted that Mason's fish productivity estimates were based on removal of all barriers. He asked whether Mason should redo these for a scenario where habitat

improvements occur only up to 1st Avenue South, but not beyond it. The PMT decided that the existing estimates were sufficiently general to be of use without modification.

General Items and Announcements

March 25 Meeting Summary

The meeting summary from March 25 was approved with a few clarifications sent to Julie and Bruce. Julie will finalize the summary and post it to the Web site.

Salmon Basin Field Trip with Citizens

Dan Bath, Curt Crawford, Bruce Bennett, and few other King County staff will be meeting with a few interested citizens in the Salmon basin tomorrow. This meeting was requested at the Salmon basin public meeting.

Modeling Web Page / Document

Bruce is working on a document for the Web site that is intended to provide an overview of the modeling work done, but with the target audience being closer to the general public. Bruce has a technical appendix for the basin plan that was prepared by the King County modelers. This is more technical than most people may want to look at. Bruce will be sending a draft of this out to the PMT members next week. He'd like comments by a week later so that the information can be posted.

Next Round of Draft Reports

Bruce expects to have another round of draft documents ready for PMT review by the end of April. Getting input on the documents is very important. Bruce asked whether having working sessions to review the documents as a group would be a good way to facilitate the document review and feedback. The PMT members present felt that individual review and email could be used for the majority of the review, but that working sessions could be useful to focus on major issues.

Upcoming Meetings

April 15 meeting is cancelled because Bruce has a conflict that cannot be changed.

The next scheduled meeting is April 22. This meeting might be cancelled if there is not a reason to meet in person (document review and comments can be done via email).

PMT Discussions with Executive Committee Members

At the last meeting, PMT members were asked to talk to their Executive Committee representatives and let them know about the concerns that had come up at the public meeting regarding enhanced public education and the discussion and decision that the PMT members had at the last meeting.

Bruce asked whether there were any significant responses from Executive Committee members on this. None of the PMT members present reported any adverse responses to the PMT course of action. If you have not had this discussion with your Executive Committee member, please do so, and please let Bruce know about any significant responses.

Action items are highlighted

Clarification on Fish and Wildlife Contact

Bruce wanted to clarify whether the PMT wanted to meet with State Fish and Wildlife staff to discuss the fish productivity estimates, or whether they wanted King County Ecologist Mason Bowles to make this contact and get feedback on the estimates, reporting the results back to Bruce Bennett.

The PMT clarified that they wanted Mason to make this contact, and that they did not see any reason for the PMT to meet with State Fish and Wildlife staff at this time.

Related Documents

Steve Osmek's PowerPoint Presentation (in PDF format) is sent separately because of the file size.

FAA Advisory Circular 150/5200-**33A (DRAFT)**	 ProposedAC150.pdf

Action items are highlighted

U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

Subject: HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS | **Date:** 1/30/04 | **Initiated by:** | **AC No:** 150/5200-33A | **Change:** DRAFT

1. PURPOSE. This advisory circular (AC) provides guidance and requirements on locating certain land uses having the potential to attract hazardous wildlife to or in the vicinity of public-use airports. It also provides guidance concerning the placement of new airport development projects (including airport construction, expansion, and renovation) pertaining to aircraft movement in the vicinity of hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

2. APPLICABILITY. The standards and practices contained in this AC are recommended by the Federal Aviation Administration (FAA) for use by the holders of Airport Operating Certificates (certificate holder) issued under Title 14 Code of Federal Regulations, part 139 (Part 139) Certification and Operations: Land Airports serving Certain Air Carrier, Subpart D. For airports which have received Federal grant-in-aid assistance, the use of these standards is mandatory. At certificated airports, the standards, practices, and recommendations may be used to satisfy specific requirements of Part 139. The standards and practices contained in this AC are recommended by the FAA as guidance for land use planners, operators, and developers of projects, facilities, and activities on or near airports.

Part 139 requires the certificate holder to conduct an ecological study[1], acceptable to the FAA, when specific events involving wildlife occur on or near the airport. This study is used by the FAA to determine if a wildlife hazard management plan (WHMP) is needed for the airport.

3. CANCELLATION. Advisory Circular 150/5200-33, *Hazardous Wildlife Attractants On or Near Airports*, dated 5/1/97, is cancelled.

4. PRINCIPAL CHANGES.

a. Reorganized outline of the AC.
b. Expanded Table 1 to include updated information from the *Special Report for the FAA "Ranking the Hazard Level of Wildlife Species to Civil Aviation in the USA: Update #1, July 2, 2003"*.
c. Removed Table 2 outlining distances between certain airport features and any on-airport agricultural crops, and removed any discussion of on-airport crop production.
d. Added discussion on the basis for separation distances between wildlife hazard and airport movement areas, and Figure 1 depicting the separation distances.
e. Added options for wetland mitigation for impacts from airport projects, including mitigation banking.

3. BACKGROUND. Information about the risks posed to aircraft by certain wildlife species has increased a great deal in recent years. Improved reporting, studies, documentation and the resulting statistics clearly show that aircraft collisions with birds and other wildlife are a serious economic and safety problem. While all species of wildlife can pose a threat to aircraft safety, not all species are equally hazardous to aviation. Table 1 ranks the wildlife groups commonly reported as being involved in damaging strikes in the U.S. according to their relative hazard to aircraft. The ranking is based on the 47,212 records that are in the FAA's Wildlife Strike Database for 1990-2003. This information is meant to rank species as to their relative hazard to assist certificate holders in focusing hazardous wildlife management efforts on the species most likely to cause problems. These hazard

1 USDA Wildlife Services uses the term "Wildlife Hazard assessment." Part 139 uses the term "ecological study." In this context, the two terms should be considered synonymous. Wildlife Hazard Assessment is the preferred term as it is more descriptive of what is actually being done.

rankings should be used in conjunction with site-specific wildlife hazard assessments to determine relative abundance and use patterns of wildlife species for the airports in question.

Table 1[2]. Ranking of 25 species groups (1=most hazardous) as to relative hazard to aircraft based on 3 criteria (damage, major damage, effect-on-flight), a composite ranking based on all 3 rankings, and a relative hazard score. Data were derived from National Wildlife Strike Database, January 1990–April 2003.

Species group	Ranking by criteria			Composite ranking[6]	Relative hazard score[7]
	Damage[3]	Major damage[4]	Effect on flight[5]		
Deer	1	1	1	1	100
Vultures	2	2	2	2	64
Geese	3	3	6	3	55
Cormorants/pelicans	4	5	3	4	54
Cranes	7	6	4	5	47
Eagles	6	9	7	6	41
Ducks	5	8	10	7	39
Osprey	8	4	8	8	39
Turkey/pheasants	9	7	11	9	33
Herons	11	14	9	10	27
Hawks (buteos)	10	12	12	11	25
Gulls	12	11	13	12	24
Rock dove	13	10	14	13	23
Owls	14	13	20	14	23
H. lark/s. bunting	18	15	15	15	17
Crows/ravens	15	16	16	16	16
Coyote	16	19	5	17	14
Mourning dove	17	17	17	18	14
Shorebirds	19	21	18	19	10
Blackbirds/starling	20	22	19	20	10
American kestrel	21	18	21	21	9
Meadowlarks	22	20	22	22	7
Swallows	24	23	24	23	4
Sparrows	25	24	23	24	4
Nighthawks	23	25	25	25	1

[2] Excerpted from the *Special Report for the FAA "Ranking the Hazard Level of Wildlife Species to Civil Aviation in the USA: Update #1, July 2, 2003"*. Refer to this report for additional explanations of criteria.

[3] Aircraft incurred at least some damage (destroyed, substantial, minor or unknown) from strike.

[4] Aircraft incurred damage or structural failure which adversely affected the structure strength, performance, or flight characteristics and which would normally require major repair or replacement of the affected component; or the damage sustained makes it inadvisable to restore aircraft to airworthy condition.

[5] Aborted take-off, engine shutdown, precautionary landing, or other.

[6] Relative rank of each species group was compared with every other group for the 3 variables, placing the species group with the greatest hazard rank for $\geq$ 2 of the 3 variables above the next-greatest ranked group, then proceeding down the list.

[7] Percentage values, from Tables 3 and 4 in the *Special Report* in Footnote 2, for the 3 criteria were summed and scaled down from 100, with 100 as the score for the species group with the maximum summed values.

Most public-use airports have large tracts of open, undeveloped land that are desirable for added margins of safety and noise mitigation. These areas can present potential hazards to aviation because they often attract hazardous wildlife. Human-made or natural areas, such as poorly-drained areas, retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, or wetlands, may be used by wildlife for escape, feeding, loafing, or reproduction. Even small facilities, such as fast-food restaurants, can produce substantial attractions for hazardous wildlife. Wildlife use of areas within an airport's approach or departure airspace, aircraft movement areas, loading ramps, or aircraft parking areas may cause conditions hazardous to aircraft safety. During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives world-wide, as well as billions of dollars worth of aircraft damage. Hazardous wildlife attractants near airports could jeopardize future airport expansion because of safety considerations.

This AC provides certificate holders, and those parties with whom they cooperate, with the direction and tools to assess potential hazardous wildlife attractants and take actions to abate these hazards. In implementing programs to reduce wildlife hazards, certificate holders and aviation regulators need to determine the relative risk posed by various species so that management actions can be prioritized by the most hazardous species. Locating new facilities and land use practices on or near public-use airports, whether by the certificate holder or another party, must be done with management of wildlife hazards in mind.

DAVID L. BENNETT
Director, Office of Airport Safety and Standards

SECTION 1. GENERAL SEPARATION CRITERIA FOR HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.

1-1. INTRODUCTION. Land use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife-aircraft collisions. For all airports receiving Federal grant-in-aid assistance, the FAA recommends minimum separation distances for land use practices that attract or sustain populations of hazardous wildlife within the vicinity of airports or cause movement of hazardous wildlife onto, into, or across the approach or departure airspace, aircraft movement area, loading ramps, or aircraft parking area of airports.

Certificate holders, local planners, and land use developers must consider whether proposed land uses, including new airport development projects, would increase the wildlife hazard. Caution must be exercised to ensure that land use practices on or near airports do not enhance the attractiveness of the area to hazardous wildlife.

The basis for the separation criteria contained in this section can be found in existing FAA Regulations. In 14 CFR 77.25, airspace surfaces for civil airports are defined, including the length and width of the horizontal, conical, primary, approach and transitional surfaces. The separation distances are based on (1) flight patterns of piston-powered aircraft and turbine-powered aircraft (turbine-powered aircraft take much longer to gain altitude than do piston-powered aircraft), (2) the altitude at which most strikes happen, and (3) NTSB recommendations. Given the geometry of the airspace surfaces for the various types of runways contained in the existing FAA Regulations, and the statistic that 78% of all strikes occur under 1,000 feet and 90% occur under 3,000 feet above ground level, the separations contained in this section are consistent with current FAA Regulations.

1-2. AIRPORTS SERVING PISTON-POWERED AIRCRAFT. If an airport does not sell Jet A fuel, then it serves piston-powered aircraft and falls in this category. These airports typically have runways designated as visual runways. Notwithstanding more stringent requirements for specific land uses, the FAA recommends separations of a distance of 5,000 feet when siting any of the hazardous wildlife attractants mentioned in Section 2 or when planning new airport development projects to accommodate aircraft movement for airports of this type. This distance is to be maintained between the farthest extending edge of the airport's aircraft movement areas, loading ramps, or aircraft parking areas and the hazardous wildlife attractant. Figure 2 depicts this separation distance extended from the farthest extending edge of the aircraft movement areas.

1-3. AIRPORTS SERVING TURBINE-POWERED AIRCRAFT. Airports selling Jet A fuel serve turbine-powered aircraft, and typically have runways designated as non-precision or precision runways. Notwithstanding more stringent requirements for specific land uses, the FAA recommends separations of a distance of 10,000 feet when siting any of the hazardous wildlife attractants mentioned in Section 2 or when planning new airport development projects to accommodate aircraft movement for airports of this type. This distance is to be maintained between the farthest extending edge of the airport's aircraft movement areas, loading ramps, or aircraft parking areas and the hazardous wildlife attractant. Figure 2 depicts this separation distance extended from the farthest extending edge of the aircraft movement areas.

1-4. PROTECTION OF APPROACH, DEPARTURE AND CIRCLING AIRSPACE. For all airports, a distance of 5 statute miles is recommended between the farthest edge of the airport surface movement area and the hazardous wildlife attractant, if the hazardous wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace.

***NOTE**: AC 150/5000-3, Address List for Regional Airports Division and Airports District/Field Offices, provides information on the location of these offices.*

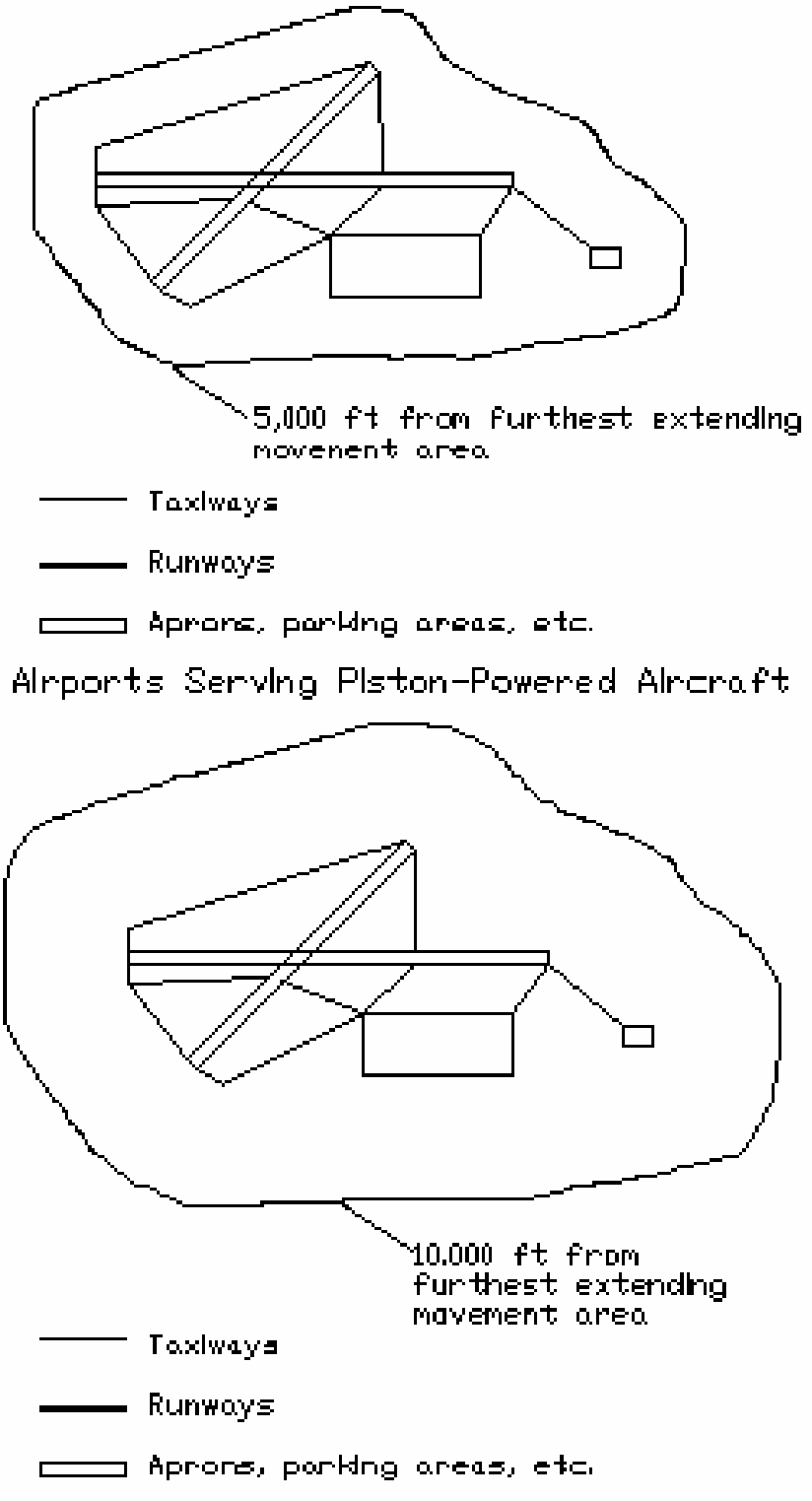
5,000 ft from furthest extending movement area
Taxiways
Runways
Aprons, parking areas, etc.
Airports Serving Piston-Powered Aircraft
10,000 ft from furthest extending movement area
Taxiways
Runways
Aprons, parking areas, etc.
Airports Serving Turbine-Powered Aircraft

Figure 1

SECTION 2. POTENTIALLY HAZARDOUS LAND USE PRACTICES ON OR NEAR AIRPORTS.

2-1. GENERAL. The wildlife species and the size of the populations attracted to the airport environment are highly variable and may depend on several factors, including land-use practices on or near the airport. It is important to identify those land use practices in the airport area which attract hazardous wildlife. This section discusses land use practices known potentially to threaten aviation safety. In addition to the specific considerations outlined as follows, certificate holders should refer to the manual for airport personnel *Wildlife Hazard Management at Airports* prepared by the FAA and USDA staff and *Prevention and Control of Wildlife Damage* compiled by the University of Nebraska Cooperative Extension Division.

2-2. WASTE DISPOSAL OPERATIONS.

a. Siting for new Municipal Solid Waste Landfills. Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) limits the construction or establishment of new municipal solid waste landfills (MSWL) within 6 statute miles of certain public use airports. Before these restrictions can be applied, both the airport and the landfill must meet very specific conditions. These restrictions do not apply to landfills or airports located within the state of Alaska.

The new MSWL must: 1) be within 6 miles of the airport, as measured from airport property line to MSWL property line; and 2) have started construction or establishment on or after April 5, 2001. Public Law 106-181 only limits the construction or establishment of some new MSWL. It does not limit the expansion, either vertical or horizontal, of existing landfills.

The airport must: 1) have received Federal grant(s) under 49 U.S.C. § 47101, et. seq.; 2) be under control of a public agency; 3) serve some scheduled air carrier operations conducted in aircraft with less than 60 seats; and 4) have total annual enplanements consisting of at least 51% of scheduled air carrier enplanements conducted in aircraft with less than 60 passenger seats.

***NOTE**: The reader is referred to FAA Advisory Circular 150/5200-34 "Construction or Establishment of Landfills Near Public Airports", dated August 26, 2000, for a more detailed discussion of these restrictions.*

For those airports and MSWL that do not meet the restrictions of Public Law 106-181, the FAA recommends against locating MSWL within the separation distance identified in Section 1-2 through 1-4. The separation distances should be measured from the farthest point of the airport's aircraft movement area, to the closest MSWL cell. MSWL are known to attract large numbers of hazardous wildlife. Because of this, these operations, when located within the separations identified in the siting criteria in Section 1-2 through 1-4, are considered incompatible with safe airport operations.

b. Enclosed trash transfer stations. Enclosed waste-handling facilities which receive garbage indoors behind closed doors, process it via compaction, incineration, or similar manner, and remove all residue by enclosed vehicles, generally are compatible, from a wildlife perspective, with safe airport operations, provided they are not located on airport property or within the Runway Protection Zone (RPZ). At these facilities, no putrescible waste should be handled or stored outside at any time, for any reason, or in a partially enclosed structure accessible to hazardous wildlife.

Trash transfer facilities that are open on one or more sides; or that leave the building's doors or windows open during normal operating hours; or that store uncovered quantities of municipal solid waste outside, even if only for a short time; or that use semi-trailers that leak or have trash clinging to the outside; or that do not control odors by ventilation and filtration systems (odor masking is not acceptable), would not meet the FAA's definition of fully enclosed trash transfer stations and would be considered incompatible with safe airport operations if located closer that the separation distances recommended in Section 1-2 through 1-4.

c. Considerations for existing waste-disposal facilities within limits of separation criteria. The FAA recommends against airport development projects that would increase the number of aircraft operations

or that would accommodate larger or faster aircraft near MSWL operations located within the separations identified in Sections 1-2 through 1-4. In addition, in accordance with 40 CFR 258.10, owners or operators of existing MSWL units that are located within the separations listed in Sections 1-2 through 1-4 must demonstrate that the unit is designed and operated so that the MSWL unit does not pose a bird hazard to aircraft. The owner or operator must place the demonstration in the operating record and notify the State Director of USDA Wildlife Services (Wildlife Services) that it has been placed in the operating record.

d. Composting operations on or near airport property. Composting operations that accept only yard waste (e.g. leaves, lawn clippings, branches) generally do not attract hazardous wildlife. Sewage sludge, wood-chips, and similar material are not municipal solid wastes and may be used as compost bulking agents. Components of the compost must never include food or other municipal solid waste. Composting operations should not be located on airport property, or if off airport property no closer than the greater of the following distances: 1,200 feet from any aircraft movement area, loading ramp or aircraft parking space; or the distance called for by airport design requirements (see FAA AC 150/5300-13, *Airport Design*). This spacing is intended to prevent material, personnel, or equipment from penetrating any Obstacle Free Area (OFA), Obstacle Free Zone (OFZ), Threshold Siting Surface (TSS), or Clearway (see AC 150/5300-13, *Airport Design*). On-airport disposal of compost by-products is not recommended for the reasons stated in 2-3.f.

e. Underwater waste discharges. The underwater discharge of any food waste, e.g., fish processing offal, which could attract scavenging hazardous wildlife is not recommended within the separations identified in Sections 1-2 through 1-4.

f. Recycling centers. Recycling centers that accept previously sorted, non-food items such as glass, newspaper, cardboard, or aluminum are, in most cases, not attractive to hazardous wildlife.

g. Construction and demolition (C&D) debris facilities. C&D landfills are not considered to be hazardous wildlife attractants if those landfills are maintained in an orderly manner, admit no putrescible waste, and are not co-located with other waste disposal operations. However, C&D landfills have similar visual and operational characteristics to putrescible-waste disposal sites. When co-located with putrescible-waste disposal operations, the probability of hazardous wildlife attraction to C&D landfills increases because of the similarities between these disposal facilities. Therefore, a C&D landfill co-located with another waste disposal operation should be located outside of the separations identified in Sections 1-2 through 1-4.

h. Fly ash disposal. The incinerated residue from resource recovery power/heat-generating facilities, which are fired by municipal solid waste, coal or wood, is generally considered not to be a wildlife attractant because it no longer contains putrescible matter. Landfills accepting only fly ash are generally not considered to be wildlife attractants. These landfills should be maintained in an orderly manner, admit no putrescible waste of any kind, and not be co-located with other disposal operations that attract hazardous wildlife.

Since varying degrees of waste consumption are associated with general incineration (not resource recovery power/heat-generating facilities), the ash from general incinerators is considered to be a regular waste disposal by-product and, therefore, a hazardous wildlife attractant if disposed of within the separation criteria outlined in Sections 1-2 through 1-4. In general, if the fly ash is pure, i.e. contains no food, then it is acceptable. If there is still some form of food for hazardous wildlife, then it is incompatible and should be considered as any other form of putrescible waste.

2-3. WATER MANAGEMENT FACILITIES. Storm water and wastewater treatment facilities and associated retention and settling ponds often attract large numbers of wildlife that can pose a threat to aircraft safety when they are located on or near an airport.

a. Existing storm water management facilities. Storm water management on airport property involves water conveyance structures which quickly remove surface water from impervious surfaces such as pavement and terminal/hangar building roofs. Existing detention ponds located on the airport which collect storm water, protect water quality and control runoff and release it slowly following storm events may attract wildlife which pose a threat to aircraft safety. Where a WHMP has been developed in

accordance with Part 139, the FAA requires correction of any wildlife hazards arising from existing storm water facilities located on or near airports without delay, using appropriate wildlife hazard mitigation techniques outlined in the WHMP.

Where possible, storm water detention ponds should be modified to contain a maximum 48 hour detention period for the design storm. Furthermore, detention ponds featuring dead storage should be avoided or removed to eliminate standing water. There are cases where there is no possibility of fully draining down all water. In these cases, certificate holders should apply such mitigating measures as bird balls, wires across the water, and other methods developed to deter hazardous wildlife. Accordingly, measures to minimize hazardous wildlife attraction should be developed in consultation with a wildlife damage management biologist. The FAA recommends and certificate holders encourage that off-airport storm water treatment managers incorporate appropriate wildlife hazard mitigation techniques into their operating practices, when located within the separation criteria in Sections 1-2 through 1-4.

b. New storm water management facilities. The FAA recommends that systems on airports and within the separations identified in Sections 1-2 through 1-4 be designed and operated so as not to create above-ground standing water, which could attract hazardous wildlife. To facilitate hazardous wildlife control, steep-sided, narrow, linearly-shaped, rip-rap lined, water detention basins should be designed. When possible, these ponds should be placed away from aircraft movement areas to minimize aircraft-wildlife interactions. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

c. Existing wastewater treatment facilities. The FAA recommends correcting any wildlife hazards arising from existing wastewater treatment facilities located on or near airports without delay. Where required, a WHMP, developed in accordance with Part 139, will outline appropriate wildlife hazard mitigation techniques. Accordingly, certificate holders should encourage wastewater treatment facility operators to incorporate measures to minimize hazardous wildlife attractants, developed in consultation with a wildlife damage management biologist. Certificate holders should also encourage those operators to incorporate these mitigation techniques in their operating practices. In addition, they should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.

d. New wastewater treatment facilities. The FAA recommends strongly against the construction of new wastewater treatment facilities or associated settling ponds within the separations identified in Sections 1-2 through 1-4. During the siting analysis for wastewater treatment facilities, the potential to attract hazardous wildlife should be considered if an airport is in the vicinity of a proposed site. Certificate holders should voice their opposition to such sitings.

e. Artificial marshes. In warmer climates, wastewater treatment facilities may employ artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. The FAA recommends strongly against establishing artificial marshes within the separations identified in Sections 1-2 through 1-4.

f. Wastewater discharge and sludge disposal. The FAA recommends against the discharge of wastewater or sludge on airport property. Regular spraying of wastewater or sludge disposal on unpaved areas may improve soil moisture and quality. The resultant turf growth requires more frequent mowing, which in turn may mutilate or flush insects or small animals and produce straw. The maimed or flushed organisms and the straw can attract hazardous wildlife and jeopardize aviation safety. In addition, the improved turf may attract grazing wildlife such as deer and geese. Problems may also occur when discharges saturate unpaved airport areas. The resultant soft, muddy conditions can severely restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

2-4. WETLANDS. Wetlands provide a variety of functions, and can be regulated by local, state and federal laws. Normally, wetlands are attractive to many wildlife species, including many which are ranked high on the list of hazardous wildlife species (Table 1).

***NOTE**: If questions exist as to whether or not an area would qualify as a wetland, contact the local division of the U.S. Army Corps of Engineers, the Natural Resources Conservation Service, or a wetland consultant certified to delineate wetlands.*

a. Existing wetlands on or near airport property. Certificate holders with wetlands located on or near airport property should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations. At certificated airports, the FAA recommends correction of any wildlife hazards arising from existing wetlands located on or near airports without delay. Where required, a WHMP, developed in accordance with Part 139, outlines appropriate wildlife hazard mitigation techniques. Accordingly, measures to minimize hazardous wildlife attraction should be developed in consultation with a wildlife damage management biologist.

b. New airport development. When practicable, the FAA recommends siting new airports using the separations from wetlands identified in the siting criteria in Sections 1-2 through 1-4. Where alternative sites are not practicable or when expanding existing airports in or near wetlands, the wildlife hazards should be evaluated and minimized through a WHMP prepared by a wildlife damage management biologist, in consultation with the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers.

c. Mitigation for wetland impacts from airport projects. Mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects or projects required to correct wildlife hazards from wetlands. Wetland mitigation must be designed so it does not create a wildlife hazard. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4.

(1) On-site mitigation of wetland functions. Exceptions to locating mitigation activities outside the separations identified in Sections 1-2 through 1-4 may be considered if the affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water recharge, which cannot be replicated when moved to a different location. Such mitigation must be compatible with safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife must be avoided. On-site mitigation plans should be reviewed by the FAA to determine compatibility with safe airport operations. Wetland mitigation projects that are needed to protect unique wetland functions, and that must be located in the siting criteria in Sections 1-2 through 1-4, should be identified and evaluated by a wildlife damage management biologist before implementing the mitigation. A wildlife damage management plan should be developed to reduce the wildlife hazards.

(2) Off-site mitigation of wetland functions. Unless identified as a unique function which must be replaced on-site (see 2-4.c.(1)), the FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4. Agencies which regulate impacts to or around wetlands recognize that the 'splitting' of wetland functions in mitigation schemes may be necessary, and therefore may allow portions of mitigation to take place in different locations.

(3) Mitigation banking. Wetland mitigation banking is the creation or restoration of wetlands in order to provide mitigation credits which can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses, consolidating small projects into larger, better designed and managed units, and by encouraging integration of wetland mitigation projects with watershed planning. This last benefit is most helpful for airport projects, as wetland impacts mitigated outside of the separations identified in Sections 1-2 through 1-4 can still be located within the same watershed. Wetland mitigation banks meeting the siting criteria offer an ecologically sound approach to mitigation in these situations. Certificate holders should work with local watershed management agencies or organizations to develop mitigation banking for wetland impacts on airport property.

2-5. DREDGE SPOIL CONTAINMENT AREAS. The FAA recommends against locating dredge spoil containment areas within the separations identified in Sections 1-2 through 1-4, if the spoil contains material that would attract hazardous wildlife, such as any form of food substance.

2-6. AGRICULTURAL ACTIVITIES. While certificate holders sometimes promote revenue-generating activities to supplement an airport's income, agricultural use may create hazards to aircraft by attracting hazardous wildlife. Any proposed on-airport agricultural operations must be reviewed by a wildlife damage management biologist. Further, some agricultural activities within the separations identified in Sections 1-2 through 1-4 should be discouraged, and all should have programs developed to reduce the attractiveness of the practice to species that are hazardous to aviation safety.

a. Livestock production. Confined livestock operations (i.e. feedlots, diary operations, hog or chicken production facilities, egg laying operations) often attract flocking birds such as starlings that pose a hazard to aviation. Therefore, these facilities should be discouraged within the separations identified in Sections 1-2 through 1-4. Any livestock operation within these separations should have a program developed to reduce the attractiveness of the site to species that are hazardous to aviation safety. Finally, free-ranging livestock must not be grazed on airport property because of the danger of their wandering onto aircraft movement areas. Additionally, birds may be attracted to livestock feed, water and manure.

b. Aquaculture. Aquaculture activities conducted outside of fully enclosed buildings are inherently attractive to a wide variety of birds that may pose a hazard to aviation safety. Existing aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4 must have a program developed to reduce the attractiveness of the site to species that are hazardous to aviation safety. New aquaculture facilities/activities should be prohibited within the separations listed in Sections 1-2 through 1-4.

2-7. GOLF COURSES, LANDSCAPING AND OTHER LAND USE CONSIDERATIONS.

a. Golf courses. Golf courses may be beneficial to airports because they provide open space that can be used for noise mitigation or by aircraft during an emergency. On-airport golf courses may also be a concurrent use that provides income to the airport.

Because of operational and monetary benefits, golf courses may be deemed potentially compatible land uses on or near airports. However, waterfowl (especially Canada geese) and some species of gulls are attracted to the large, grassy areas and open water found on most golf courses. Because waterfowl and gulls occur throughout the U.S., the FAA recommends that certificate holders exercise caution and consult with a wildlife damage management biologist when considering proposals for golf course construction or expansion on or near airports. Furthermore, landscaping of any golf course on an airport must not include roost trees, water, or ornamental plants which produce seeds, fruits or berries.

Any golf courses located within the separations identified in Sections 1-2 through 1-4 should have a program developed to reduce the attractiveness of the site to species that are hazardous to aviation safety. Golf courses should be monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be implemented immediately.

b. Landscaping and landscape maintenance. Hazardous wildlife attraction to landscaping may vary by geographic location. The FAA recommends that certificate holders approach landscaping with caution and confine it to airport areas not associated with aircraft movements. All landscaping plans should be reviewed by a wildlife damage management biologist. Landscaped areas should be monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be implemented immediately.

Turf grass areas can be highly attractive to a variety of species of hazardous wildlife. Research conducted by the USDA Wildlife Services' National Wildlife Research Center has shown that no one grass management regime will deter all species of hazardous wildlife in all situations. Airport turf grass management plans should be developed on a prescription basis, depending on the airport's geographic locations and the type of hazardous wildlife likely to frequent the airport.

Certificate holders should ensure that plant varieties attractive to hazardous wildlife are not used on the airport. Disturbed areas or areas in need of re-vegetating should not be planted with seed mixtures containing millet or any other large-seed producing grass. For airport property already planted with seed mixtures containing millet or other large-seed producing grasses, it is recommended that disking, plowing, or other suitable agricultural practice be employed to prevent plant maturation and seed head production. Furthermore, landscaping on an airport must not include roost trees, water, or ornamental plants which produce seeds, fruits or berries. The area should be planted based upon the specific recommendations for grass management and seed selection from the State University Cooperative Extension Service, or the local office of Wildlife Services.

c. **Airports surrounded by wildlife habitat.** Certificate holders at certificated airports surrounded by water or wetlands should refer to Section 2.4 of this AC. Certificate holders at certificated airports surrounded by woodlands and other wildlife habitat should provide for a Wildlife Hazard Assessment, in accordance with Part 139, conducted by a wildlife damage management biologist. This Wildlife Hazard Assessment is the first step in preparing a WHMP, where required.

d. **Other hazardous wildlife attractants.** Other specific land uses or activities (fishing, shellfish harvesting), perhaps unique to certain regions of the country, may also have the potential to attract hazardous wildlife. Regardless of the source of the attraction, when hazardous wildlife use is noted on a certificated airport, prompt remedial action(s) to protect aviation safety is required. In accordance with Part 139, certificate holders must be prepared to take immediate action to deal with unexpected incursions of hazardous wildlife into aircraft movement areas, loading ramps, or parking areas.

2-8. SYNERGISTIC EFFECTS OF SURROUNDING LAND USES. There may be circumstances where two (or more) different land uses which would not, in and of themselves, be considered hazardous wildlife attractants, or where such attractants are located outside of the separations identified in Sections 1-2 through 1-4, are in such an alignment with the airport as to create a wildlife corridor directly through the airport and/or surrounding airspace. An example of this situation might involve a lake located outside of the separation criteria on the east side of an airport, and a large hayfield on the west side of an airport, creating a flyway for Canada geese directly across the airspace of the airport. There are likely countless examples of such a situation, therefore certificate holders and the wildlife damage management biologist must consider the entire surrounding landscape and community when developing the WHMP under Part 139.

SECTION 3. PROCEDURES FOR WILDLIFE HAZARD MANAGEMENT BY OPERATORS OF CERTIFICATED AIRPORTS.

3-1. INTRODUCTION. In recognition of the increased risk of serious aircraft damage or the loss of human life that can result from a wildlife strike, the FAA may require the development of a WHMP when specific triggering events occur on or near the airport. The specific events that trigger a Wildlife Hazard Assessment, and the specific issues that a WHMP must address for FAA approval and inclusion in the Airport's Certification Manual are presented in Part 139.

3-2. COORDINATION WITH QUALIFIED WILDLIFE DAMAGE MANAGEMENT BIOLOGISTS OR USDA WILDLIFE SERVICES. The FAA will use the wildlife hazard assessment, conducted in accordance with Part 139, to determine if a WHMP is needed for an airport. Therefore, the assessment must be conducted by persons having the education, training, and experience necessary to assess adequately any wildlife hazards. The certificate holder may look to private consultants or to Wildlife Services to conduct the required Wildlife Hazard Assessment.

When the services of a wildlife damage management biologist are required, the FAA recommends that land use developers or the certificate holder contact a consultant specializing in wildlife damage management. If no such consultant is available, the appropriate state director of the Wildlife Services should be contacted.

***NOTE**: Telephone numbers for the respective USDA Wildlife Services state offices may be obtained by contacting USDA Wildlife Services Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD, 20737-1234, Telephone (301) 734-7921, Fax (301) 734-5157.*

3-3. *WILDLIFE HAZARD MANAGEMENT AT AIRPORTS: A MANUAL FOR AIRPORT PERSONNEL*. This manual, prepared by the FAA and USDA Wildlife Services staffs, contains a compilation of information to assist airport personnel in the development, implementation, and evaluation of WHMPs at airports. The manual includes specific information on the nature of wildlife strikes, legal authority, regulations, wildlife management techniques, wildlife hazard assessments, WHMPs and sources of help and information. The manual is available in three languages, English, Spanish and French. It can be viewed and downloaded free of charge from the FAA wildlife hazard mitigation web site: http://wildlife-mitigation.tc.faa.gov It is emphasized that this manual provides only a starting point for addressing wildlife hazard issues at airports. Hazardous wildlife management is a complex discipline and conditions vary widely across the United States. Therefore, the development of a WHMP and the implementation of management actions by airport personnel must be under consultation by qualified wildlife damage management biologists trained in wildlife damage control.

Complementary to this manual are many other resources for certificate holders in developing and implementing WHMPs. These are listed in the bibliography.

3-4. ECOLOGICAL STUDIES[8] UNDER Part 139. Part 139 requires the certificate holder to conduct a Wildlife Hazard Assessment ("Ecological Study") acceptable to the FAA Administrator when an aircraft experiences a multiple bird strike, a damaging collision with wildlife other than birds, or when wildlife of a size or in numbers sufficient to cause these events is observed. This Assessment must be conducted by a qualified professional wildlife damage management biologist. Part 139 outlines the requirements of the study, and the *Wildlife Hazard Management at Airports* manual provides clarification and guidance for completing the study. In addition to identifying the wildlife observed and the locations of the features on or near the airport that attract the wildlife, the Assessment must include specific prioritized recommendations for mitigating the identified hazardous wildlife attractants.

[8] USDA Wildlife Services uses the term "Wildlife Hazard Assessment." Part 139 uses the term "Ecological Study." In this context the two terms should be considered synonymous. Wildlife Hazard Assessment is the preferred term because it is more descriptive of what is actually being done.

As a point of clarification, the Assessment is not the same as a one day site visit. Wildlife Services officially refers to the site visit as the "initial consultation." The Assessment, however, could take up to one year if the nature of hazards and the time period in which they operate are not clear.

3-5. WILDLIFE HAZARD MANAGEMENT PLANS (WHMP). The FAA will consider the results of the Wildlife Hazard Assessment, along with the aeronautical activity at the airport and the views of the certificate holder and airport users, in determining whether or not a formal WHMP is needed, in accordance with Part 139. If the FAA determines that a WHMP is needed, the certificate holder must then formulate and implement a WHMP, using the Wildlife Hazard Assessment as the basis for the plan.

The goal of an airport WHMP is to minimize wildlife populations on and around the airport that pose a threat to aviation safety or to structures, equipment and human health. The WHMP must identify hazardous wildlife attractants on or near the airport and the appropriate wildlife damage management techniques to minimize the wildlife hazard, along with prioritization of the management measures.

3-6. LOCAL COORDINATION. The establishment of a Wildlife Hazards Working Group (WHWG) will facilitate the communication, cooperation and coordination of the airport and its surrounding community necessary for the review of the effectiveness of the WHMP. The cooperation of the airport community is also necessary when new projects are considered, whether on or off the airport, so that the input from all involved parties is considered when a potentially hazardous wildlife attractant is being proposed.

Certificate holders must be aware of proposed land use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in Sections 1-2 through 1-4. Particular attention should be given to proposed land uses involving creation or expansion of waste water treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas. Certificate holders, at the very least, must be on the notification list of the local planning board or equivalent review entity for all communities located within 5 miles of the airport, in order to receive notification of any proposed project to review for attractiveness to hazardous wildlife.

3-7. COORDINATION WITH FAA PURSUANT TO NEPA. In accordance with the National Environmental Policy Act of 1969 (NEPA) (Public Law 42 U.S.C. 4321-4347, as amended), certificate holders must carefully consider environmental impacts of implementation of steps in the WHMP. Except under extraordinary circumstances outlined in FAA Order 5050.4A, paragraph 24, federal actions carried out in fulfillment of the requirements of Part 139 in the WHMP may be categorically excluded under NEPA. A proposed WHMP must be reviewed by a FAA Environmental Specialist to make this determination. Certificate holders must work closely with the FAA early in the WHMP development process to identify these environmental considerations.

3-8. COORDINATION/NOTIFICATION OF AIRMEN OF WILDLIFE HAZARDS (NOTAM). If an existing land use practice creates a wildlife hazard, and the land use practice or wildlife hazard cannot be immediately eliminated, the certificate holder must issue a Notice to Airmen (NOTAM) and encourage the land owner or manager to take steps to control the wildlife hazard and minimize further attraction.

SECTION 4. FAA REVIEW OF PROPOSED LAND USE CHANGES.

4-1. FAA REVIEW DURING NEPA PROCESS. In brief, under the Airports Program the FAA is responsible for analyzing the environmental impacts and consequences of a proposed Federal action involving airports, for the environmental assessment and related documents, and ultimately for approving or disapproving the environmental documents and the Federal action. Although the environmental assessment submitted by a certificate holder may be used in whole or in part, the FAA is responsible for the facts, opinions, and judgments upon which the environmental determination is based. It is, therefore, incumbent upon the FAA to assure that all documentation presents a full, accurate, and fair assessment of the environmental consequences of the proposed action. Attractiveness to hazardous wildlife shall be reviewed under the "Environmental Consequences Specific Impact Categories" portion of any Environmental Impact Statement or Environmental Assessment under NEPA.

4-2. FAA REVIEW OF PROPOSED LAND USE CHANGES.

a. The FAA discourages the development of facilities discussed in Section 2 that will be located within the 5,000/10,000-foot criteria in Sections 1-2 through 1-4.

b. For projects which are located outside the 5,000/10,000-foot criteria, but within 5 statute miles of the airport's aircraft movement areas, loading ramps, or aircraft parking areas, the FAA may review development plans, proposed land use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. Sensitive airport areas will be identified as those that lie under or next to approach or departure airspace. This brief examination should be sufficient to determine if further investigation is warranted.

c. Where further study has been conducted by a wildlife damage management biologist to evaluate a site's compatibility with airport operations, the FAA will use the study results to make its determination.

4-3 WASTE MANAGEMENT FACILITIES.

a. Notification of new/expanded project proposal. Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) limits the construction or establishment of new MSWL within 6 statute miles of certain public use airports, when both the airport and the landfill meet very specific conditions. See Section 2-2 of this AC and AC 150/5200-34 *Construction or Establishment of Landfills Near Public Airports*, for a more detailed discussion of these restrictions.

The Environmental Protection Agency (EPA) requires any operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the certificate holder of the proposal (40 CFR 258, *Criteria for Municipal Solid Waste Landfills*, Section 258.10, *Airport Safety*). The EPA also requires owners or operators of new MSWL units, or lateral expansions of existing MSWL units that are located within 10,000 feet of any aircraft movement areas, loading ramps, or aircraft parking areas used by turbojet aircraft or within 5,000 feet of any aircraft movement areas, loading ramps, or aircraft parking areas of any airport used by piston-type aircraft, to demonstrate successfully that such units are not hazards to aircraft. When new or expanded MSWLs are being proposed near airports, MSWL operators must notify the certificate holder and the FAA of the proposal as early as possible pursuant to 40 CFR 258.

b. Waste handling facilities within separations identified in Sections 1-2 through 1-4. To claim successfully that a waste handling facility sited within the separations identified in Sections 1-2 through 1-4 does not attract hazardous wildlife and does not threaten aviation, the developer must establish convincingly that the facility will not handle putrescible material other than that as outlined in 2-2.b. The FAA will use this information to determine if the facility will be a hazard to aviation if the facility is other than as outlined in 2-2.b (enclosed transfer stations).

c. Putrescible-Waste Facilities. In their effort to satisfy the EPA requirement, some putrescible-waste facility proponents may offer to undertake experimental measures to demonstrate that their proposed facility will not be a hazard to aircraft. To date, the ability to sustain a reduction in the numbers of hazardous wildlife to levels that existed before a putrescible-waste landfill began operating has not been

successfully demonstrated. For this reason, demonstrations of experimental wildlife control measures may not be conducted in active aircraft operations areas.

4-4 OTHER LAND USE PRACTICE CHANGES. While U.S. EPA regulations require landfill owners to provide notification, no similar regulations require notifying the FAA about changes in other land use practices that can create hazardous wildlife attractants. Although it is not required by regulation, the FAA requests those proposing land use changes within 5 statute miles of an airport to provide similar notice to the FAA as early in the development process as possible. Certificate holders who become aware of such proposed development in the vicinity of their airports should also notify the FAA. The notification process gives the FAA an opportunity to evaluate the effect of a particular land use change on aviation safety.

The land use operator or project proponent may use FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, or other suitable documents to notify the appropriate FAA Regional Airports Division Office.

It is helpful if the notification includes a 15-minute quadrangle map of the area identifying the location of the proposed activity. The land use operator or project proponent should also forward specific details of the proposed land use change or operational change or expansion. In the case of solid waste landfills, the information should include the type of waste to be handled, how the waste will be processed, and final disposal methods.

a. Airports which have received Federal grant-in-aid assistance. For airports which have received Federal grant-in-aid assistance, the FAA requires that certificate holder, to the extent practicable, oppose off-airport land use changes or practices within the separations identified in Sections 1-2 through 1-4 that may attract hazardous wildlife. Failure to do so may lead to a finding of noncompliance with applicable grant assurances. The FAA will not approve the placement of airport development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants without appropriate mitigating measures to alleviate the attractiveness. Certificate holders should identify hazardous wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects.

b. Additional coordination. If, after the initial review by the FAA, questions remain about the existence of a wildlife hazard near an airport, the certificate holder should consult a wildlife damage management biologist. Such questions may be triggered by a history of wildlife strikes at the airport or the proximity of the airport to a wildlife refuge, body of water, or similar feature known to attract wildlife.

APPENDIX 1. DEFINITIONS OF TERMS USED IN THIS ADVISORY CIRCULAR.

1. **GENERAL.** This appendix provides definitions of terms used throughout this AC.

    1. **Aircraft movement area.** The runways, taxiways, and other areas of an airport which are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft exclusive of loading ramps and aircraft parking areas.

    2. **Aquaculture.** The managed production of aquatic plants and animals.

    3. **Certificate holder.** The holder of an airport operating certificate or a limited airport operating certificate, except that as used in subpart D of Part 139 "certificate holder" does not mean the holder of a limited airport operating certificate if its airport certification specifications do not require compliance with the section in which it is used.

    4. **Certificated airport.** A public airport for which an Airport Operating Certificate has been issued.

    5. **Approach or departure airspace.** The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.

    6. **Concurrent use.** Aeronautical property used for compatible non-aviation purposes while at the same time serving the primary purpose for which it was acquired; and the use is clearly beneficial to the airport. The concurrent use should generate revenue to be used for airport purposes (see Order 5190.6A, *Airport Compliance Requirements*, sect. 5h).

    7. **Federal action.** The Federal action, as far as the Airports Program is concerned, may be any of the following:

        a. Approval of an airport location;
        b. Approval of an airport layout plan or revisions to an airport layout plan;
        c. Approval of funding for airport development (including separate funding of plans and specifications for development);
        d. Requests for conveyance of government land under Section 516 of the Airport and Airway Improvement Act of 1982 for development or improvement of a public airport; and/or
        e. Approval of release of airport land.

    1. **Fly ash.** The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.

    2. **Hazardous wildlife.** Wildlife species that are commonly associated with wildlife-aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a wildlife-aircraft strike hazard.

    3. **Piston-use airport.** Any airport that would primarily serve fixed-wing, piston-powered aircraft. Incidental use of the airport by turbine-powered, fixed-wing aircraft would not affect this designation. However, such aircraft should not be based at the airport.

    4. **Public-use airport.** Any publicly owned airport or a privately-owned airport used or intended to be used for public purposes.

    5. **Putrescible material.** Rotting organic material.

    6. **Putrescible-waste disposal operation.** Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.

7. **Runway protection zone (RPZ).** An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the airport design, aircraft, type of operation, and visibility minimum.

8. **Sewage sludge.** The de-watered effluent resulting from secondary or tertiary treatment of municipal sewage and/or industrial wastes, including sewage sludge as referenced in U.S. EPA's *Effluent Guidelines and Standards*, 40 C.F.R. Part 401.

9. **Shoulder.** An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface, support for aircraft running off the pavement, enhanced drainage, and blast protection (see AC 150/5300-13).

10. **Turbine-powered aircraft.** Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft rotary-wing aircraft.

11. **Turbine-use airport.** Any airport that routinely serves fixed-wing turbine-powered aircraft.

12. **Wastewater treatment facility.** Any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including Publicly Owned Treatment Works (POTW), as defined by Section 212 of the Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-576) and the Water Quality Act of 1987 (P.L. 100-4). This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. (See 40 CFR Section 403.3 (o), (p), & (q)).

13. **Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring there of (50 CFR 10.12, *Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants*). As used in this AC, wildlife includes feral animals and domestic animals while out of the control of their owners (Part 139, *Certification and Operations: Land Airports Serving CAB-Certificated Scheduled Air Carriers Operating Large Aircraft (Other Than Helicopters)*).

14. **Wildlife attractants.** Any human-made structure, land use practice, or human-made or natural geographic feature, that can attract or sustain hazardous wildlife within the landing or departure airspace, aircraft movement area, loading ramps, or aircraft parking areas of an airport. These attractants can include but are not limited to architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquaculture activities, surface mining, or wetlands.

15. **Wildlife hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport (Part 139).

2. RESERVED